Bandolier 134

Independent evidence-based thinking about health care

On value

Value is a really difficult thing to define. There are some great quotes about value, like the famous Oscar Wilde definition of a cynic as a man who knows the price of everything and the value of nothing. Across the water in the USA, HL Mencken quipped that the chief value of money lies in the fact that one lives in a world in which it is overestimated.

Neither of which is particularly useful in exploring what value means in healthcare. There is a narrow definition, that of a cost per quality adjusted life year (QALY). Informally we tend to accept in the UK that anything with a cost per QALY of £30,000 or less is good value, and if it is more than that it is poor value.

That's fine as far as it goes. The trouble is that calculating a cost per QALY is not always the easiest thing in the world. First you need a cost, and then you need a QALY. Given that in some circumstances there can be considerable uncertainty, then opportunities for disagreement are probable - they occur when cost is high and quality of life low, with uncertainty in both.

People and pounds

What affects people most, and what costs most, do not always coincide. Chronic conditions in older people are an example of this, and there is some smashing data to demonstrate the dichotomy in older people. Conditions that negatively affect health status are not always the most expensive to treat, making one think about relative values.

The value of glucose monitoring for people with type 2 diabetes is a topic well worth revisiting, since new RCTs have delivered four times more information about the benefits of monitoring than a previous meta-analysis of small trials.

The message is that blood, but not urine, monitoring reduces glycated haemoglobin, and reduces later complications. Another message is that while some people do particularly well, others do not, so average results are of limited value.

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Glucose monitoring in type-2 diabetes

In some parts of the world there is controversy about whether blood or urine testing for glucose in patients with type 2 diabetics on oral treatment is worthwhile. There are some large and very positive observational studies demonstrating an association between increased blood glucose monitoring and lower levels of HbA_{1c} and and between lower levels of HbA_{1c} and reduced complications and cost (Bandolier 84, 93). But purists demand randomised trials showing benefit from glucose monitoring.

A systematic review in 2000 [1] concluded there was no evidence of clinical effectiveness of self-monitoring. It was correct in that there were only 230 patients in four trials providing evidence on glycosylated haemoglobin and blood glucose monitoring, insufficient to make a decision.

But three of the four trials had lower HbA_{1c} levels, with an overall reduction of about 0.23% more than control. While this was not significantly different from control, the analysis was confounded by inclusion of results from urine monitoring in one of the studies. Despite the small sample, the trend was for lower HbA_{1c} levels with self monitoring of blood glucose.

For some, lack of evidence from RCTs trumps good evidence from good observational studies. New RCTs have been published in the intervening years, which makes it interesting to revisit our thinking on blood glucose monitoring. Two new trials provide almost four times more information than did the meta-analysis.

Blood glucose monitoring in Germany [2]

Type 2 diabetic outpatients with BMI over 25, HbA_{1c} values between 7.7 and 10%, and treated with diet or diet plus oral hypoglycaemic agents, were enrolled into a randomised trial of self monitoring of blood glucose or not monitoring for six months, plus a further six months of follow up. There was a range of sensible exclusion criteria.

The self monitoring group was requested to measure blood glucose six times (before and one hour after meals) on two days a week (12 measurements), and to keep results in a diary. They were seen every four weeks, and received a defined algorithm focusing on self-perception, reflection and regulation. The control group received non-standardised counselling with a focus on diet and lifestyle.

Results

Patients in both groups (233 total) were aged about 60 years on average, had an average BMI of about 31, initial HbA_{1c} levels of about 8.4%, and about half were women. HbA_{1c} levels fell in both groups, by an average of 1% with self-monitoring, and 0.5% with control, a statistically greater improvement in HbA_{1c} levels with self-monitoring.

It was suggested that there were three subgroups in the self-monitoring group: those who were continuously successful (58%), with an average end of study HbA_{1c} level below 7%; those with delayed success (18%), who after an initial rise had an average final HbA_{1c} level of about 7.8%; and failures (24%), with an average final HbA_{1c} level of 8.6%.

Self-monitoring led to significant improvements in measures like depression and well being. Cholesterol, triglycerides and microalbumin improved more with self-monitoring, but not significantly so. Self-monitoring patients actually tested themselves 24 times a week, and kept accurate diaries. Over the six month follow up, 90% of patients randomised to self monitoring of blood glucose continued to do so.

Blood glucose monitoring in France [3]

A randomised study in general practice included patients aged between 40 and 75 years with type 2 diabetes taking oral hypoglycaemic medicines, and with HbA_{1c} levels between 7.5 and 11%. Controls were seen as usual, including laboratory tests every 12 weeks. The experimental group additionally were required to perform at least six blood glucose measurements a week. The duration was six months, with monthly visits. For analysis there had to be at least two evaluations of HbA_{1c} levels.

Results

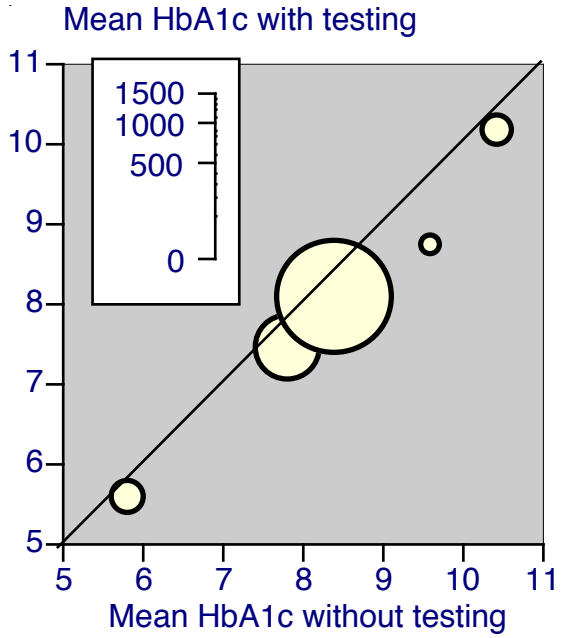
Patients in both groups (689 total) were aged about 61 years, had an average BMI of 30, initial HbA_{1c} levels of 9.0%, and about half were women. HbA_{1c} levels fell in both groups, by an average of 0.9% with self-monitoring, and 0.6% with control, a statistically greater improvement in HbA_{1c} levels with self-monitoring. At the end of six months 57% of patients who self monitored had improved their HbA_{1c} level by more than 0.5%, compared with 47% with control. This implies an NNT for blood glucose self monitoring over six months of 10 (95% CI 5.7 to 39).

There were no differences between the groups in weight or other blood measurements. There were no serious episodes of hypoglycaemia in the study, but symptomatic or asymptomatic hypoglycaemia was reported in 10% of patients in the self-monitoring group, compared with 5% in the control group.

Pulling it all together

It is possible to combine the results of these two new large studies with four small studies in the previous meta-analysis [1]. In all, self-monitoring of blood glucose has been tested in 1,142 patients in six studies, 80% of whom were in the two new ones published since the meta-analysis.

Figure 1: HbA1c levels (%) in RCTs comparing self monitoring blood glucose with no monitoring



Consistently lower end of study HbA_{1c} levels were found for blood glucose self-monitoring in five trials with results, across a range of HbA_{1c} levels (Figure 1). With blood glucose self-monitoring, the weighted average reduction in HbA_{1c} level was 0.82%, 0.30% more than with control.

Other supporting information

Intensive blood glucose monitoring in type 2 diabetes can lead to reduced HbA_{1c} levels. For instance, a randomised trial in Korea of Internet monitoring versus normal monitoring (Bandolier 129) led to a doubling in the number of blood glucose measurements made by patients, and an average improvement in HbA_{1c} levels of 0.7%.

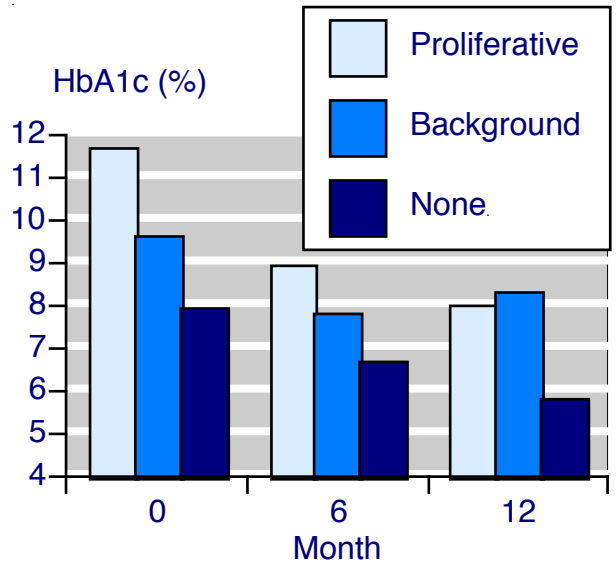
A cohort study [4] in Turkey examined the impact of a combination of educational programme plus blood glucose self monitoring on all type 2 diabetic patients with and without retinopathy in one clinic over one year. The average age was 58 years, 60% were women and the average duration of diabetes was nine years. Implementation of the programme led to large falls in HbA_{1c} levels in all groups (Figure 2).

Comment

Randomised trial evidence may not be the whole story when looking for evidence. In 2000 there was no convincing RCT evidence that blood glucose self monitoring was beneficial in type 2 diabetes, but neither did the RCTs have evidence that there was no benefit. Absence of evidence of benefit was not evidence of absence of benefit.

Observational studies supported benefit, and even the few small studies we had could be interpreted as telling us that there was likely to be a small benefit. New RCTs confirm that there is indeed a significant benefit of blood glucose self

Figure 2: HbA1c levels (%) over 12 months when combined with education, in patients with different levels of diabetic retinopathy



monitoring in type 2 diabetics. We can be more confident of this now than then, but new RCTs have not changed the overall conclusion, just supported it.

Perhaps for some the size of the benefit might be an issue. The German RCT tells us that while the average benefit may be small, that is because some people have little fall in HbA_{1c} levels, perhaps because they do not follow diet or medications. Some patients benefit much more, with larger reductions in HbA_{1c} level and consequent reduction in future complications. This is another example where average results are of less interest than knowing that an intervention benefits some people very much. For those individuals, the cost of blood glucose monitoring is very likely to be offset by lower costs of care over a lifetime.

References:
1 S Coster et al. Self-monitoring in type 2 diabetes mellitus: a meta-analysis. Diabetic Medicine 2000 17: 755-761.
2 U Schwedes et al. Meal-related structured self-monitoring of blood glucose. Effect on diabetes control in non-insulin-treated type 2 diabetic patients. Diabetes Care 2002 25: 1928-1932.
3 B Guerci et al. Self-monitoring of blood glucose significantly improves metabolic control in patients with type 2 diabetes mellitus: the auto-surveillance intervention active (ASIA) study. Diabetes Metabolism 2003 29: 687-694.
4 B Özmen, S Boyvada. The relationship between self-monitoring of blood glucose control and glycosylated haemoglobin in patients with type 2 diabetes with and without diabetic retinopathy. Journal of Diabetes and its Complications 2003 17: 128-134.

Urine testing is a waste of time

Bandolier is always looking out for studies that help us understand what patients think about their care. These studies require a different approach from randomised trials for interventions, Patient perspectives are usually obtained through detailed interviews.

A diagnosis of type 2 diabetes may come with instructions or advice to test for glucose in blood or urine. A Scottish study [1] indicates that patients hate urine testing.

Study

Forty newly diagnosed patients with type 2 diabetes within the previous six months were interviewed initially, and then twice more over one year. Five had GP contact only and 35 contact with GP and hospital. Initially about half mentioned self-monitoring spontaneously, so specific questions were included in further interviews. Transcripts were kept to identify recurrent themes and to identify new research questions.

Results

Sixteen patients performed urine testing after diagnosis, the method (urine or blood) determined by the diabetes service. By the last interview only five were using urine testing, three having stopped and eight changed to blood glucose monitoring.

Patient views on urine testing were overwhelmingly negative, particularly those who had subsequent experience of blood monitoring.

- Urine monitoring was seen as messy, and while blood monitoring could be done anywhere, urine testing required a toilet.
- Glucose meters were seen as positive, accurate and useful, with low readings reinforcing good diabetic control.
- Not having a blood glucose monitor was seen as meaning that patients did not have serious diabetes, or that their diabetes was not being taken seriously enough.
- Negative results on urine testing (a good thing), were often interpreted by patients as negative, either that they were doing the test incorrectly, that they did not have diabetes, or were cured.

Comment

These results strongly suggest that patients have a significant preference for blood over urine testing, and that urine testing could actually be harmful in some people with newly diagnosed type 2 diabetes. In any event, few people persevere with urine testing. Given that studies from a previous era when blood glucose self monitoring was nothing like as easy as it is now, had similar results, it is hard to see many good reasons for bothering with it. Despite being the views of only 16 patients, we might do well to take note.

Reference:
1 J Lawton et al. 'Urine testing is a waste of time': newly diagnosed type 2 diabetic patients' perceptions of self-monitoring. Diabetes Medicine 2004 21: 1045-1048.

Glucose self monitoring in the UK

With new technologies, we need not only to know how good they are, and how people value them, we also need to know where we are now, and what the dynamics are. When it comes to glucose self monitoring in primary care in the UK, a study [1] at least tells us what was happening up to 1998.

Study

This is an analysis of the UK General Practice Research Database (GPRD), with large amounts of good data on primary care in the UK. The cohort of subjects was first prescribed oral hypoglycaemic drugs between 1993 and 1998, dates chosen to optimise the number of practices and duration of follow up. Subjects aged less than 30 years, and with less than three months of follow up were excluded.

Information was collected for the first year after the first prescription of oral hypoglycaemic drugs, with censoring if patients died or were changed to insulin. The number of prescriptions for glucose monitoring strips during the first year was the main outcome.

Results

Over the six years and 263 practices, 11,688 subjects were first prescribed oral hypoglycaemic drugs. The average age was 64 years, and half were women. The number of subjects per practice averaged 45, ranging from four to 142.

Overall, 28% had no monitoring prescribed, with 36% prescribed urine monitoring, 25% blood monitoring, and 11% urine and blood monitoring. Over the period the trend was for blood monitoring to increase and urine monitoring to decrease, with blood monitoring being more common than urine by the end of the period (Figure 1). The proportion who did not monitor increased from 24% in 1993 to about 30% over later years.

Age was a major factor in monitoring. The proportion not monitoring increased from about 25% in the under-75 population, to 38% in those aged 75-84 years, and to 53% in those aged over 85 years. Blood monitoring was more frequently used in younger patients (Figure 2).

There was wide variation between practices over their monitoring policy. For urine monitoring the range was 0 to 95% of patients using urine monitoring, and for blood monitoring it was 6-91%. There was also very considerable geographical variation within the UK, with blood monitoring highest in Wales (42%), urine monitoring highest in Scotland (Figure 3), and patients in Northern Ireland having the highest proportion (61%) not monitoring.

Comment

Of course, this information is now almost a decade out of date, but it demonstrates the uncertainty that has existed until recently about the value of any glucose self monitoring in type 2 diabetes, and if there is benefit, which type should be used. We now have better information. We can be pretty sure that blood glucose self monitoring reduces glycated haemoglobin levels, at least in a majority of patients with type 2 diabetes. Better control leads to fewer complications and lower treatment costs. We also have strong indications that patients are not happy with urine monitoring. The evidence for using blood glucose self monitoring in people with type 2 diabetes appears to be growing.

Figure 1: UK monitoring 1993-1998

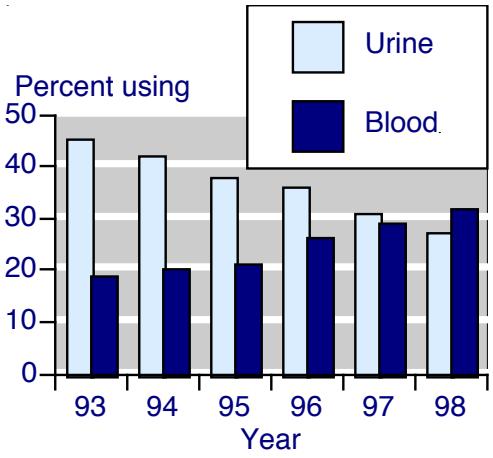


Figure 2: UK monitoring by age group

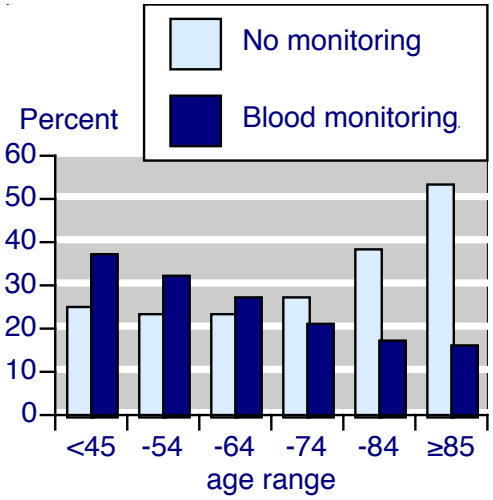
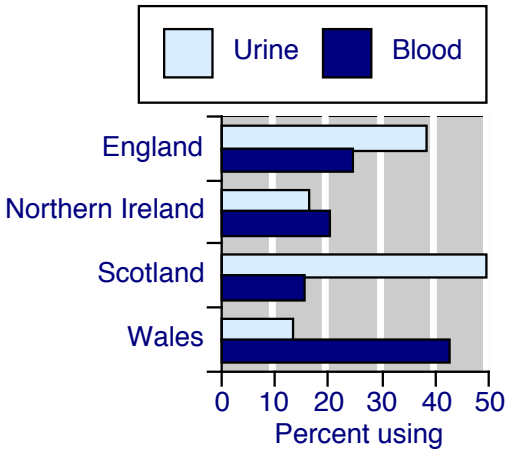


Figure 3: UK monitoring by region



Reference:

1 M Gulliford, R Latinovic. Variations in glucose self-monitoring during oral hypoglycaemic therapy in primary care. Diabetes Medicine 2004 21: 685-690.

Weight loss and erectile function

Is fat sexy? Perhaps it depends on one's perspective, but there is certainly good evidence that in overweight men there are high reported levels of erectile dysfunction, and that risk of erectile dysfunction increases with increasing BMI. The implication is that losing weight would restore or improve erectile function, and a randomised trial [1] shows that to be the case.

Randomised trial

This Italian study enrolled young men between 35 and 55 years from a weight loss clinic in Naples. For inclusion they had to have an International Index of Erectile Function (IIEF) score of 21 points or less out of the maximum of 25. The IIEF was described in Bandolier 90, and has five questions on erectile function, each scored on a scale of 1 to 5. Scores of 21 or below are indicative of erectile dysfunction. Use of drugs for erectile function was an exclusion criterion.

Men were randomly assigned to detailed advice about how to achieve a body weight reduction of 10% or more, with instruction about caloric intake, setting goals, and self-monitoring, with monthly small group sessions. Behavioural and psychological counselling was also available. The goal was a diet containing 1700 kcal daily for the first year, and 1900 daily for the second, and with targets for carbohydrates, protein, unsaturated fats, and fibre. Men in the control group were given general oral and written information about healthy food choice and exercise at every visit, but without specific individualised programmes.

Detailed measurements were made at various times over two years, to include blood tests, food diaries, and erectile function.

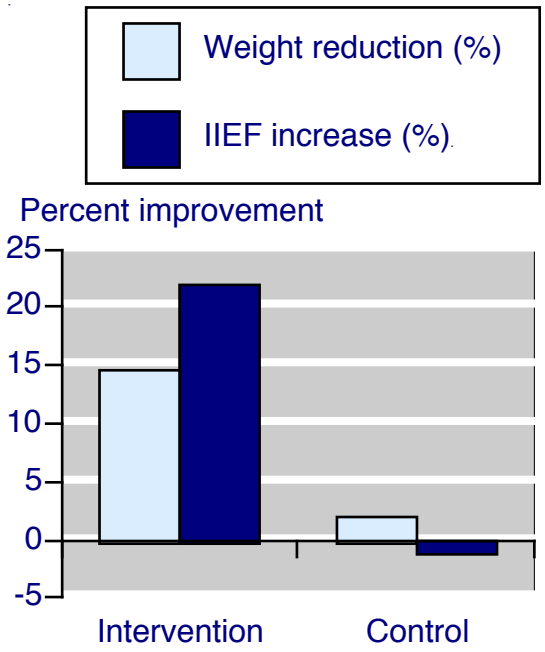
Results

The intervention and control groups (55 men in each) were similar at baseline, with an average age of 43 years, weight of 102 kg, and BMI of 36. At two years the control group had virtually no change in caloric intake, while men in the intervention group had an average of 340 kcal less every day, and also took much more daily exercise. Men in the intervention group increased their intake of fibre, protein, and unsaturated fat, and decreased their consumption of saturated fat and cholesterol.

The result was that in the intervention group men lost an average of 15 kg, their BMI fell to 31, and they developed a waist. In the control group there was no change in average weight or in IIEF score, while in the intervention group weight loss and improvement in IIEF score were proportionate (Figure 1).

By the end of two years, three of 55 men (5%) in the control group who originally had IIEF scores of 21 or less now had scores of 22 or greater. In the intervention group, 17 men (31%) now had scores of 22 or greater, indicating that they did not have erectile dysfunction. The number needed to treat for weight loss to restore erectile function was 3.9 (95% CI 2.6 to 8.4)

Figure 1: Change in average weight and IIEF scores over two years in men on intensive weight loss programme or control



There were also significant improvements in blood pressure (by about 3 mmHg on average), total and high density cholesterol, triglycerides, fasting glucose, C-reactive protein and other variables in men in the intervention group following weight loss.

Comment

Observational studies linking overweight to erectile dysfunction in men create a hypothesis that losing weight could restore erectile function. The randomised trial may be small in numbers, but was impeccable in detail, and had a very positive result. The NNT of 4 was an intention-to-treat value based on all men randomised, despite about six withdrawing, three in each group.

The intensive behavioural intervention produced big weight reductions, and a significant minority of men had restored erectile function. Their average weight was still 88 kg after two years, and BMI was 31 after two years, so even more men may have benefited with continuing weight loss.

Thinner meant more sex, or opportunity for it, in these young men, as well as overall better health. Bandolier 133 demonstrated how significant weight loss led to less knee arthritis in an older population. These are important lessons about how overweight is bad, and proper weight is good. A clear message is developing that for those people who are overweight, structured weight loss can restore better health.

Reference:
1 K Eposito et al. Effect of lifestyle changes on erectile dysfunction in obese men. A randomized controlled trial. JAMA 2004 291: 2978-2984.

Quality of life, health status, and cost

Bandolier has long been interested in quality as much as quantity of life, how quality is related to chronic conditions, how chronic conditions are related to age, and how all three are related to costs. A framework like this might be important in framing decisions about healthcare interventions, and about the value we put on them.

Value here is taken to mean an informal composite of societal and personal value, rather than value as it relates to some computed cost of an intervention, like cost of a quality adjusted life year (QALY). Cost per QALY is a useful metric, although more often a rather broad-brush assessment of value. The medical literature is quiet as a mouse when it comes to definitions of value outside of the dictionary. In the dictionary value can be defined as an amount expressed in money thought to be a fair exchange for something – hence cost per QALY. Other definitions of value include the worth, importance, or usefulness of something to somebody.

Cheap can be valuable, expensive valueless. As a start, then, a look at three useful papers looking at quality of life and chronic conditions, factors associated with health status, and age, chronic conditions, and cost.

Chronic conditions and quality of life [1]

Cross sectional mail and interview surveys conducted in eight countries (Denmark, France, Germany, Italy, Japan, Netherlands, Norway and USA) were used, with individual sample sizes of 2,000 to 4,000 adults. Self-reported prevalence of various chronic conditions, demographic data, and SF-36 questionnaires were obtained. Analysis was adjusted for age, sex, marital status and SF-36 administration.

Results

Information was obtained for 25,000 people with a mean age of 44 years, half of whom were men. Overall, 44% had no chronic condition, with 56% of people reporting 1, 2, or more chronic conditions (Figure 1). The proportion with no chronic conditions was highest in Japan and Denmark (58%) and lowest in the USA (34%). Overall a high proportion of those with one chronic condition had another chronic condition, the lowest being 66% for allergies and the highest 91% for congestive heart failure.

Figure 1: Percent with chronic conditions

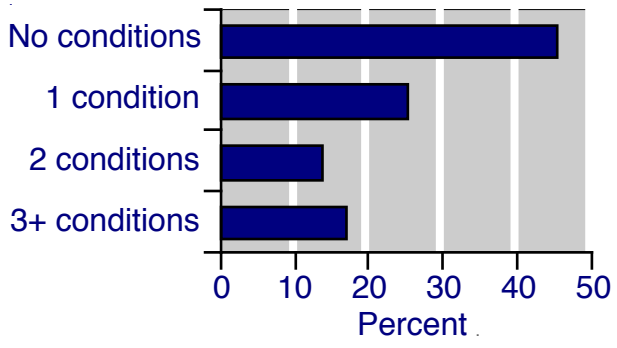


Table 1: SF-36 summaries across eight countries

Condition	Prevalence (%)	SF-36 summaries	
		Physical	Mental
Allergies	15.5	1.0	1.1
Arthritis	15.7	4.5	1.5
Chronic lung disease	5.9	4.4	2.0
Congestive heart failure	4.0	4.4	2.1
Diabetes	3.7	3.5	1.0
Hypertension	17.1	1.5	1.7
Ischaemic heart disease	4.2	3.3	2.1

SF-36 summaries show adjusted reduction in score compared to those with no reported chronic condition

Seven main conditions were analysed (Table 1), together with back problems, dermatitis, and vision and hearing problems. For the seven main conditions (Table 1) there was considerable variability between countries, but for the pooled sample hypertension, arthritis, and allergies were most common. Adjusted reductions in the physical and mental summaries of SF-36 for each of the main conditions are shown in Table 1.

Arthritis, chronic lung disease and congestive heart failure had the largest negative impact on quality of life. For these, the reduction of quality of life is predictive of a 27% increase in inability to work due to health problems in one year, or a 16% increase in mortality in five years.

Health status in older Americans [2]

To investigate associations between physical and mental health status in older Americans and demographic factors, symptoms, or diseases, a survey was conducted of over 100,000 Medicare beneficiaries aged 65 or older. From each of over 250 plans, 1000 people were randomly selected. A short form of SF-36 was used to collect information about health status, with demographic data and additional questions about a range of different symptoms scaled from whether they affected individuals from all of the time to none of the time. Factors associated with physical and mental health summaries scores of SF-36 were then sought through regression analysis. Excluded were people who did not complete forms themselves, or who did not provide all the information.

Results

Information was available from 108,000 older Americans who did not live in institutions and who answered the questions themselves, with an average age of 74 years (range 65-108), and 58% were women. Symptoms or diagnoses in 10% or more respondents are shown in Table 2.

For the physical component summary, the average score was 43, below that for the general population. Regression analysis showed that the number of chronic conditions, and disease diagnoses and symptoms contributed most to lowered physical health status. Age was not an important

Table 2: Common symptoms or diagnoses in older Americans

Symptom or diagnosis	Percent
High blood pressure	52
Arthritis of hip or knee	36
Arthritis of hand or wrist	33
Acid indigestion/ heartburn	31
Difficulty walking	30
Difficulty controlling urine	25
Difficulty getting in or out of chair	22
Sciatica	22
Other heart condition	20
Felt sad 2 weeks in last year	18
Health somewhat/much worse in last year	16
Angina or coronary artery disease	15
Diabetes	15
Shortness of breath on walking	15
Any cancer	13
Emphysema, asthma, COPD	12
Depressed, sad most days for 2 years	12
Shortness of breath climbing stairs	11
Cannot hear most things people say	11
Sad much of time	11
Back pain all or most of the time last month	10

factor. Of the symptoms and diagnoses, the most important were shortness of breath climbing stairs, back pain, difficulty in getting into or out of chairs, arthritis of hip or knee, and worsened health in the last year.

For the mental component summary, the average score was 54, above that for the general population. Factors associated with worsened mental health were shortness of breath when sitting, back pain, chest pain on exercise, and worsened health in the last year.

Age, chronic conditions, and costs [3]

All US veterans aged 65 or older (1.6 million) who received full benefits during 2000 formed the basis of a study relating age, chronic condition, and cost of medical care. Twenty-nine chronic conditions were identified, and persons with more than one condition were allocated to one on the basis of which was the more expensive. Total costs for the fiscal year 2000 were then reported under that heading. Two age groups were used, those aged 65 to 79 years (1.3 million), and those aged 80 years or older (300,000).

Results

The proportion of people with no chronic conditions, or one, two, or three or more were similar for both age groups (Figure 2). The average costs were higher for those who had at least one chronic condition than those with none, but not for those who were older (Figure 3).

Annual costs for each condition and age group in Table 3, only include medical costs, and not costs of long term care.

Figure 2: Percent with chronic conditions

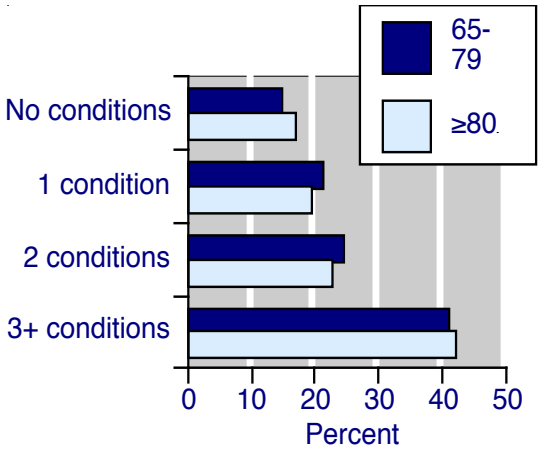
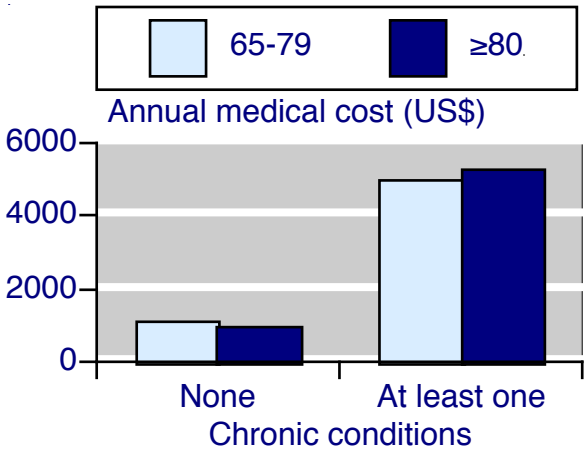


Figure 3: Costs by age and chronic conditions



Long term care costs formed a higher proportion of total cost for older than for younger people (Figure 4), because about twice as many older people needed long term care. Other than long term care, the mix of service costs was similar.

The overall cost burden is a product of the cost per case and the number of cases. For those aged 65-79 years, congestive heart failure and renal failure both incurred 11% of the total burden, including long term care costs. For those 80 years or older, dementia and Alzheimer's disease (15%) was also a major contributor to overall burden. Ischaemic heart disease, diabetes, and hypertension were the most prevalent conditions. The prevalence of each condition is also in Table 3. The number of people in the top 10 most expensive chronic conditions was 18% for the younger patients and 25% in the oldest patients, and the top 10 conditions were responsible for 50% or more of total cost.

Figure 4: Long term care as percent of total

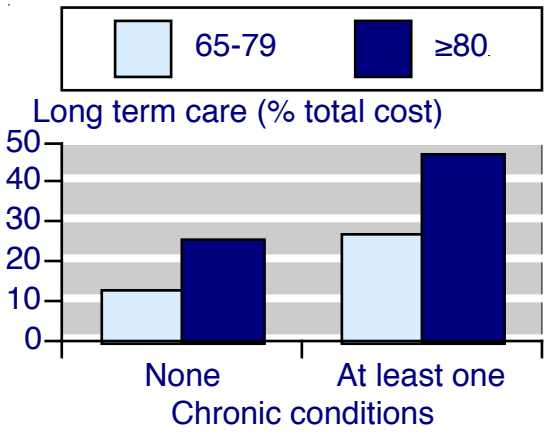


Table 3: Mean cost for chronic condition, and prevalence, by age in US veterans

Condition	Mean cost (US$)		Prevalence (%)	
	65-79 years	≥80 years	65-79 years	≥80 years
Spinal cord injury	25200	2230	0.42	0.32
Renal failure	18900	16200	2.73	3.73
Lung cancer	15200	12400	1.28	1.08
Dementia	11400	10000	1.33	3.65
Alzheimer's disease	6740	6700	0.56	1.77
AIDS/HIV	12400	9600	0.08	0.02
Cancer, not otherwise listed	9920	9400	2.65	2.60
CVA/stroke	9250	8750	2.50	2.86
Colorectal cancer	9480	8650	1.04	1.22
Congestive heart failure	9150	8200	5.71	8.07
Alcoholism	7600	7150	1.67	0.59
Multiple sclerosis	5350	6700	0.14	0.08
Parkinson's disease	4700	4400	1.16	1.78
Peripheral vascular disease	6160	5500	4.20	4.33
Psychoses	6700	5650	2.94	2.48
Hepatitis C	5200	5000	0.19	0.08
Prostate cancer	4250	4250	4.27	5.21
Depression	4200	4350	1.89	1.36
COPD	3550	3700	7.07	5.94
Acid-related disorders	3280	3400	2.50	2.16
Asthma	3050	3100	1.44	1.05
Headache	3300	3150	0.72	0.53
Ischaemic heart disease	2600	2500	12.11	10.91
Diabetes	2300	2350	8.32	5.36
Lower back pain	2200	2400	2.08	1.67
Arthritis	1800	1950	4.70	4.80
Substance abuse	1600	1750	0.66	0.21
Benign prostatic hyperplasia	1450	1700	3.22	3.02
Hypertension	1300	1450	7.93	6.58

Comment

The finding from the multinational quality of life survey [1] that chronic arthritis, lung disease or heart failure had the largest negative impact on health related quality of life accords with previous studies ranking chronic diseases (Bandolier 83). To some extent this is not new, though it is interesting to see differences between countries. What it does is to reinforce that the paradigms we become used to (importance of ischaemic heart disease, for instance), while not wrong, may not always be completely right either, and we need a broad not narrow approach to how we see chronic diseases.

A similar type of result came from the survey of older Americans [2]. The large number of respondents had to be living in the community, and able to fill the forms themselves, but represent a very large proportion of older people. Age was not an important factor in reduced physical or mental health. Having chronic conditions, especially musculoskeletal conditions like arthritis and back pain was the major component of reduced physical and mental health, combined with shortness of breath.

Conditions with large negative impact on health status, like musculoskeletal conditions need not have a concomitant impact on overall costs, as the survey of US veterans found [3]. Nor did age consistently mean higher medical costs, though long term care costs were higher in the oldest old. Resource use was concentrated in a few chronic conditions, with the top 10 most expensive conditions (based on total cost) accounting for half or more of the medical costs.

There are several implications. First, that healthy older people are not expensive, and it is the chronic disorders that are expensive. Policies designed to reduce them (smoking and lung cancer, obesity and heart disease, for example) should reduce the overall burden, possibly very substantially. Looking at the costs in this way also provides targets for technology or management improvements that could improve care while reducing costs, perhaps through care pathways. It certainly helps in prioritising.

Then we recognise that conditions with large negative impacts on quality of life, like arthritis or back pain, are not among the most expensive. There is a tension between looking at health status and health costs.

For us as individuals, all of the above emphasises that it is better to be healthy than not. It brings to mind a quote from Izaac Walton from some hundreds of years ago who said "Look to your health; and if you have it, praise God and value it next to conscience; for health is the second blessing that we mortals are capable of, a blessing money can't buy."

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